



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,536	07/02/2002	Kazuhisa Sakamoto	ROH-051	5552

7590 12/30/2003

Mr. Steven M. Rabin
c/o RABIN & BERDO, P.C.
Suite 500
1101 14th Street, NW
Washington, DC 20005

EXAMINER

LOKE, STEVEN HO YIN

ART UNIT	PAPER NUMBER
----------	--------------

2811

DATE MAILED: 12/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,536

Applicant(s)

SAKAMOTO, KAZUHISA

Examiner

Steven Loke

Art Unit

2811

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 5-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 5-8 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3 and 5-8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Baliga et al.

In regards to claim 1, Baliga et al. show all the elements of the claimed invention in figs. 3-6. It is a semiconductor device, comprising: a functional element having a first conductivity type (n-type) semiconductor region [14] provided in a semiconductor substrate [16, 18, 14], and a second conductivity type (p-type) semiconductor region [42] provided in contact with the first conductivity type semiconductor region [14] and having a conductivity type different from that of the first conductivity type semiconductor region [14], wherein a diode (a semiconductor structure formed by regions [32, 15, 14]) is provided in a boundary portion of a contact region to which an electrode [46] is connected in the first conductivity type semiconductor region [14]; the diode including a second conductivity type region [32] embedded in the first conductivity type semiconductor region [14] in a region crossing over a boundary of the contact region, the second conductivity type region [32] having a conductivity type different from that of the first conductivity type semiconductor region [14], the second conductivity type region [32] being in contact with the electrode [46] in the contact region.

In regards to claim 3, Baliga et al. further disclose a universal contact structure (a structure formed by regions [32, 34]) including the second conductivity type region [32] is provided in contact with the electrode [46].

In regards to claim 5, Baliga et al. further disclose the diode is provided adjacent a surface of the first conductivity type semiconductor region [14].

In regards to claim 7, Baliga et al. further disclose the diode is provided at least in a part of the boundary portion of the contact region facing the second conductivity type semiconductor region [42].

In regards to claim 8, Baliga et al. further disclose the diode is provided in the entire boundary portion of the contact region (fig. 4).

In regards to claim 6, Baliga et al. show all the elements of the claimed invention in figs. 3-6. It is a semiconductor device, comprising: a functional element having a first conductivity type (n-type) semiconductor region [14] provided in a semiconductor substrate [16, 18, 14], and a second conductivity type (p-type) semiconductor region [42] provided in contact with the first conductivity type semiconductor region [14] and having a conductivity type different from that of the first conductivity type semiconductor region [14], wherein a diode (a semiconductor structure formed by regions [32, 15, 14]) is provided in a boundary portion of a contact region to which an electrode [46] is connected in the first conductivity type semiconductor region [14], and wherein the contact region has a generally C-shaped (fig. 4) which surrounds a portion of the second conductivity type semiconductor region [42] on the surface of the first

conductivity type semiconductor region [14] (a portion of electrode [46] that surrounds the regions under the electrode [45]).

3. Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: The first major difference in the claims not found in the prior art of record is the diode is provided at least in a part of the boundary portion of the contact region adjacent to the bonding region. The second major difference in the claims not found in the prior art of record is the functional element is a bipolar transistor, which comprises a base region, defined by the first conductivity type semiconductor region, and an emitter region defined by the second conductivity type semiconductor region.

5. Applicant's arguments with respect to claims 1, 3, 5, 7, 8 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Loke whose telephone number is (703) 308-4920. The examiner can normally be reached on 7:50 am to 5:20 pm.

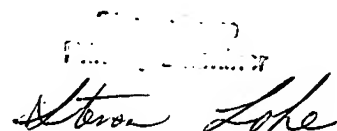
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 2811

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

sl

December 19, 2003

A handwritten signature in cursive script, appearing to read "Steven Loke". Above the signature, there is a faint, rectangular stamp that is mostly illegible but seems to contain the words "RECEIVED" and "DEC 22 2003".